DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/25/2009 has been entered. Upon entering amendment, claims 1 and 2 have been amended; claim objections have been withdrawn.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US 5,506,071, "Tanaka") in view of Brookover et al. (US 3,345,218, "Brookover").

5. **Regarding claim 1**, Tanaka discloses sealing electrode and surge absorber using the same; the apparatus (figs. 1a and 1b) comprising:

an insulating member (13b) having a conductive film (13a) divided by a discharge gap (13c) interposed therebetween;

a pair of main discharge electrode members (11 and 12) containing chromium, and one or more of iron and nickel (col. 5, lines 66-67), opposite to each other;

an insulating tube (10) fitted to the pair of main discharge electrode members opposite to each other to seal both the insulating member and a sealing gas (14) inside thereof; and

oxide films (11c) having a thickness, formed on main discharge surfaces of the pair of main discharge electrode members by performing an oxidation treatment (col. 5, line 66 – col. 6, line 5).

With regard to the oxide film having chromium, Tanaka discloses in col. 4, lines 56-60 that the electrode member (11a) having a copper thin film (11b) thereon is placed under an atmosphere of oxygen at a high temperature, and cooled to form the copper oxide film (11c) on the surface of the copper thin film (11b) (see fig. 1a). It will be appreciated by those skilled in the art that, chromium oxide films is made in the same process as copper oxide film (col. 5, lines 67 - col. 6, line 5). Therefore, Tanaka's electrode member (11) includes oxide films having chromium, formed on main discharge surface of the pair of main discharge electrode members by performing an oxidation treatment.

Tanaka discloses the claimed invention except for the main discharge electrode member contacting the conductive film. Tanaka rather discloses a cap electrode is being disposed in between the main discharge electrode members and the conductive

film. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to eliminate the cap electrode, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Tanaka does not explicitly disclose the oxide films having an average thickness in the range of 0.01 to 2.0 micron; this is viewed to be optimum value, which is dependent upon the operating condition and design requirement. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tanaka by setting oxide film thickness to some specific value, since when the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Tanaka does not explicitly disclose the oxide film having a chromium concentration that is higher at an external surface than at an interior surface adjacent to the respective electrode member. Brookover discloses method of preoxidizing chrome-containing alloy parts under controlled conditions to provide a uniform adherent chromium-enriched oxide film over at least sealing surfaces to permit their subsequent positive non-strippable sealing to glass in forming hermetic durable seals (col. 2, lines 50-56). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tanaka and utilize method of chromium

enriched oxide film, as taught by Brookover, in order to permit their subsequent positive non-strippable sealing to glass in forming hermetic durable seals (col. 2, lines 50-56).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Brookover and Shigemori et al. (US 4,410,831, "Shigemori").

7. **Regarding claim 2**, Tanaka discloses sealing electrode and surge absorber using the same; the apparatus (figs. 1a and 1b) comprising:

a column-shaped insulating member (13b and see col. 4, lines 64-65) having a conductive film (13a) divided by a discharge gap (13c) interposed in an intermediate of a peripheral surface;

a pair of main discharge electrode members (11 and 12) containing chromium and one or more of iron and nickel (col. 5, lines 66-67), opposite to each other on both ends of the insulating member;

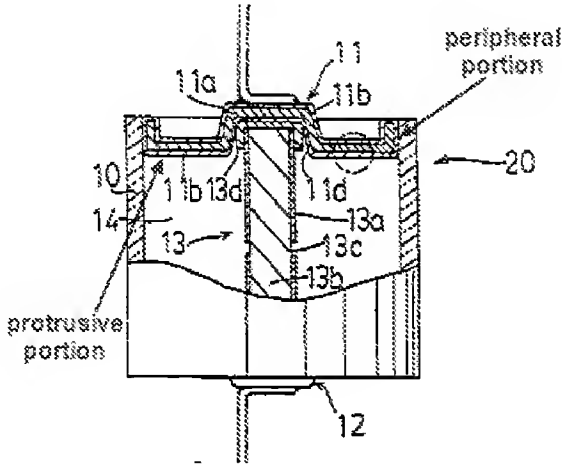
an insulating tube (10) fitted to the pair of main discharge electrode members opposite to each other to seal both the insulating member and a sealing gas (14) inside thereof,

wherein the main discharge electrode members (see reproduced figure next page) comprise:

peripheral portions attached to the insulating tube by brazing filter metal (col. 5, lines 17-25);

protrusive supporting portions protruding toward an inside and an axial direction of the insulating tube and supporting the insulating member in the radial inner surface thereof, and

oxide films (11c) having a thickness, formed on main discharge surfaces of the protrusive supporting portions of the pair of main discharge electrode members opposite to each other, by performing an oxidation treatment (col. 5, lines 17-25).



With regard to the oxide film having chromium, Tanaka discloses in col. 4, lines 56-60 that the electrode member (11a) having a copper thin film (11b) thereon is placed under an atmosphere of oxygen at a high temperature, and cooled to form the copper oxide film (11c) on the surface of the copper thin film (11b) (see fig. 1a). It will be appreciated by those skilled in the art that, chromium oxide films is made in the same process as copper oxide film (col. 5, lines 67 - col. 6, line 5). Therefore, Tanaka's electrode member (11) includes oxide films having chromium, formed on main discharge surface of the pair of main discharge electrode members by performing an oxidation treatment.

Tanaka discloses the claimed invention except for the main discharge electrode member contacting the conductive film. Tanaka rather discloses a cap electrode is being disposed in between the main discharge electrode members and the conductive film. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to eliminate the cap electrode, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Tanaka does not explicitly disclose the oxide films having an average thickness in the range of 0.01 to 2.0 micron; this is viewed to be optimum value, which is dependent upon the operating condition and design requirement. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tanaka by setting oxide film thickness to some specific value, since when the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Tanaka does not explicitly disclose the oxide film having a chromium concentration that is higher at an external surface than at an interior surface adjacent to the respective electrode member. Brookover discloses method of preoxidizing chrome-containing alloy parts under controlled conditions to provide a uniform adherent chromium-enriched oxide film over at least sealing surfaces to permit their subsequent positive non-strippable sealing to glass in forming hermetic durable seals (col. 2, lines

50-56). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tanaka and utilize method of chromium enriched oxide film, as taught by Brookover, in order to permit their subsequent positive non-strippable sealing to glass in forming hermetic durable seals (col. 2, lines 50-56).

Tanaka does not explicitly disclose the peripheral portions attached to end faces of the insulating tube. In the same field of endeavor, Shigemori discloses peripheral portions of discharge electrode members attached to end faces of an insulating tube (1) (see fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Tanaka and employ the peripheral portions of the discharge electrode members attached to end faces of the insulating tube, as taught by Shigemori, in order to keep the insulating tube in place.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIEN MAI whose telephone number is 571-270-1277. The examiner can normally be reached on M-Th: 7:00-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rexford Barnie can be reached on 571-272-7492. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Tien Mai/
Examiner, Art Unit 2836

/Danny Nguyen/
Primary Examiner, Art Unit 2836